

REMARKS

Reconsideration of the present application in view of the above amendments and following remarks is respectfully requested.

Status of the Claims

Claims 37, 46-47, 49-50, 53 and 55-57 are presented. Claim 37 is amended to include the drying temperature (tumble dryer, program: colors; Examples 1 and 3) as commonly known in the art, supported by the Declaration of Werner Mauer. No claims are cancelled. No new claims are added.

No new matter has been introduced.

Summary of the Invention as Claimed

The claims as presently amended are directed to a process for washing, cleaning or aftertreatment of laundry. The process as now claimed comprises the steps of (1) contacting the laundry at a temperature of less than or equal to about 40°C, with an aqueous composition comprising (a) a compound of formula (II); (b) at least one member selected from the group consisting of textile fiber cleaning surfactants and textile fiber softening agents; and (c) water; and (2) drying said laundry **at a temperature from about 60-70°C**, wherein the treated laundry exhibits reduced pilling (claim 37).

Rejections under 35 U.S.C. § 103(a)

Previously pending claims 37, 46, 49-50, 53 and 55 were rejected under 35 U.S.C. § 103(a) as being obvious over Benisek, at al. (US 4,448,817, "Benisek") in view of Lewis (US 3,933,421). Applicants respectfully traverse the rejection.

Benisek discloses a method of **finishing** keratinous articles. In other words, the processes disclosed in Benisek are industrial processes directed to the general field of creating articles of manufacture for consumer use. Thus, this patent describes such

method steps as contacting the articles with “an anti-felt polymer, a polymer of a chlorinated ethylenically unsaturated monomer,...and anionic titanium or zirconium complex **at low pH**.” This highly acidic treatment is then followed by step of **curing the treated material at elevated temperature**. Importantly, Benisek teaches that the polymers of the invention are **curable** (col. 1, lines 56 – 58) and that the treatment of the fibers **requires curing at high temperatures**, for example, 140 - 150°C (all Examples). This finishing treatment provides **shrink-resistance** and **flame-retardancy** to the textiles when carried out in this industrial setting. Importantly, Benisek does not disclose or suggest the step of contacting “laundry” for the purposes of washing or cleaning, nor does he disclose the advantageous effect of **reduced pilling**.

In contrast, claim 37 as presently amended claims a process comprising the steps of contacting **laundry**, such as by washing, cleaning or in an aftertreatment mode, at a temperature of less than or equal to about 40°C, followed by **drying of the laundry at relatively low temperature**. The drying temperature is disclosed by applicants’ examples to be either “air”, which would represent a temperature of about 20-30°C, as commonly understood in the art (see Declaration of Werner Mauer), or “tumble dryer, program: colors”, which would represent a temperature of about 60-70°C, as commonly understood in the art (see Declaration of Werner Mauer). As is well known to those skilled in the art, the drying of laundry in a commercial dryer involves temperatures in the range of from about 60°C to about 70°C. Furthermore, those skilled in the art are aware that temperatures in the range specified for the **curing** process in the patents cited by the Examiner would do substantial damage and harm to laundry, especially laundry comprised of wool or cotton fibers. Applicants respectfully submit that these facts are well known and understood by those skilled in the art, as attested to by inventor and expert Werner Mauer in his Rule 132 Declaration, submitted herewith.

Thus, it is evident that the process of the present invention is directed to a method which is carried out in association with the normal care of articles of laundry. The

process as now claimed is dramatically different from Benisek's process by virtue of the process conditions that are present. For example, the use of such highly acidic process conditions, together with such high temperature **curing** conditions (at least 140° C) would certainly destroy any "laundry" in the conventional sense, which is to be cleaned or washed. As is well known to those skilled in the art, washing and drying of **laundry** precludes a high temperature **curing** step such as that taught by Benisek, as opposed to conventional drying as would be practiced using a commercial tumble dryer, for example using the drying program "colors".

Further, the skilled artisan reading Benisek would understand that both anti-felt polymers and chlorinated polymers in admixture are required for effective textile **finishing**, followed by a curing step at **high temperature** in order to achieve **shrink resistance** and flame retardancy. Such a process provides no guidance or suggestion with respect to improved methods of treating laundry, such as by washing, cleaning or aftertreatment. The problem of pilling is not even mentioned in Benisek, and therefore it is not surprising that Benisek fails to disclose not only the present process, but the unexpected and highly advantageous results achieved by applicants' process directed to the treatment of laundry.

The Examiner has stated that "one of ordinary skill would be motivated to add the instantly claimed concentration for **additional shrink resisting properties**" (Office Action, page 4, fourth paragraph; emphasis added), and "one of ordinary skill would expect similar fabrics treated with similar chemical compositions by similar method steps would be provided with **similar benefits** to the fabrics by the chemical composition" (Office Action, page 5, fourth paragraph; emphasis added). The Examiner appears to be taking the position that pilling and shrink resistance are related properties, but has failed to cite any reference which equates these two properties.

However, as attested to in the Declaration of Werner Mauer, one skilled in the art would understand pilling and shrink resistance to be two **entirely different properties** of

a textile. Pilling is the tendency of a textile to form pills, or round balls/knots of fibers. Pilling is caused by **loose ends** of fibers agglomerating with each other during washing **or wearing**. Pills affect the **appearance** of a textile, but not the function. In contrast, shrink resistance is related to the **function** of a textile. When a textile shrinks, it becomes too small or irregular for its intended use, and thereby loses its function. Shrinkage occurs during washing (i.e., when wet) and not during **wearing**. As the fibers swell when wet, the fabric relaxes, free of tension. For wool, cotton and certain other fibers subject to shrinkage, the individual relaxed fibers can bind to each other easily when wet, thereby increasing the tension when the fabric is dried, resulting in shrinkage.

Thus, one skilled in the art would consider pilling and shrink resistance to be separate and unrelated properties of a textile.

Further, as clearly disclosed in applicants' Examples, **shrinkage actually occurs in applicants' treatments which reduce pilling**. Thus Examples 1 and 3 clearly state that

"The shrinkage of the washed woolen samples was 4% in every case."
(specification as originally filed, page 7, lines 8-9; and page 10, lines 4-5)

In these Examples, there was no correlation of shrinkage with the concentration of the applied aqueous composition of the process, from 0 to 10%; that is, the shrinkage was 4% in **all** cases. However, there was a clear rate response with regard to pilling behavior, the higher concentrations reducing the pilling. **Thus, applicants' process as presently claimed is effective at reducing pilling, but ineffective with regard to preventing shrinkage**. Therefore, applicants' process is clearly unrelated to the property of shrinkage, but is clearly effective with regard to pilling. Thus, the two properties of pilling and shrinkage are seen to be different and uncorrelated by experimental evidence.

Still further, the Examiner also stated that “the teaching of exhaustion or padding would provide the textiles with the requisite washing or cleaning as impurities would be removed during immersion and during the pickup during padding” (Office Action, page 4, bottom paragraph). The Examiner appears to be taking the position that “exhausting” and “padding” are process steps related to “washing” or “laundering”, but again has failed to cite any reference which equates or relates these properties.

However, as attested to in the Declaration of Werner Mauer, one skilled in the art would understand that “washing” or “laundering” is distinct from the textile finishing process steps of “padding” or “exhausting”. Padding is a **forced impregnation** of a textile with a bath containing a compound or composition in a specific concentration. The textile is soaked in the bath and squeezed through rollers. Wet uptake (by weight) of the textile corresponds to the concentration of the compounds or composition in the bath. Exhausting is a process step with the object of **applying** a product or compound via affinity or ionic charge attraction. Examples of this type include the cationic fabric softeners added to the last rinse of a washing cycle. Both of these processes are designed and optimized to **add** certain compounds or compositions to the textile.

In contrast, washing/laundering is designed and optimized to **remove** stains, soil, dirt, etc. from fabric. Thus, one skilled in the art would not equate padding or exhaustion with washing/laundering. The objects of these process steps are diametrically opposed to one another.

As observed by the Examiner, Benisek fails to teach the addition of a surfactant to the treatment composition, and also fails to teach the percentage of compounds related to formula (II). In order to cure this deficiency of Benisek, the Examiner added Lewis. However, in view of the above remarks, it is clear that the addition of Lewis fails to cure the substantial defects of Benisek as discussed above.

Previously pending claims 37, 46-47, 49-50 and 55-57 were also rejected under 35 U.S.C. § 103(a) as being obvious over Lewis. Applicants respectfully traverse this rejection as well.

Lewis discloses a process for treatment of natural and/or synthetic fibers and materials, involving applying a polymeric compound containing at least one polyalkylenoxy or polyamide chain and at least one thiosulfate group (Bunte salt), and **curing** the fibers/materials thereby imparting **shrink resistance** properties. The curing step may involve prolonged exposure to light or heat, or be effected by treatment with strong acids, bases or reducing agents (col. 6, lines 58-67).

The arguments recited in the discussion of Benisek, above, apply to Lewis as well. More specifically, the method as now presented is directed to the treatment of laundry under **mild** conditions, and such processes are nowhere suggested by Lewis, which includes a high-temperature **curing** step which would effectively damage or destroy the laundry which is to be treated by applicants' process. Accordingly, the subject matter now claimed is also novel and non-obvious over Lewis.

Conclusion

In summary, in view of the present claim amendments and remarks, and the Declaration of Werner Mauer, applicants believe that the pending claims as amended are in condition for allowance. Further, in view of the Examiner's failure to cite appropriate references for the assertions made, as discussed above, applicants respectfully request that the finality of the present office action be withdrawn. The Examiner is respectfully requested to enter the amendments, reconsider, withdraw the rejections and allow the claims.

If any additional fees are required in support of this application, authorization is granted to charge our Deposit Account No. 50-1943.

Respectfully submitted,

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